



HR Green, Inc., (HR Green) is a multi-discipline professional services and construction firm offering planning, technical consulting, engineering, environmental services, and construction to clients in diverse markets. Founded in Cedar Rapids, Iowa in 1913, by Howard Ruggles Green, the firm now employs over 500 people in Missouri, Iowa, Illinois, California, Minnesota, South Dakota, Colorado and Texas.

One of America's oldest design and construction firms, HR Green enjoys a longstanding reputation for environmental stewardship, public service and technical excellence. The firm is consistently ranked among ENR's Top 500 Design Firms and ENR's Top 100 Construction Firms in the United States.

HR Green Transportation

Our transportation business puts the end users first – developing designs, building consensus and constructing infrastructure that meets the needs of our clients while considering the future. Funding, environmental compliance and public involvement can be daunting obstacles before even tackling the technical complexities of a project. Your needs are great, and they can be met by a creative partner with the resources to tackle every aspect of your challenge.

HR Green is equipped with the latest technology and knowledge to lead any project from planning through construction, while applying valuable business sense.

Our transportation engineers have created Centralized Traffic Management Systems, used advanced vehicle control systems, dynamic route guidance, and advanced traveler information to compile data when working on upgrades to transportation systems. 3D models allow us to design with greater accuracy and efficiency, identifying potential conflicts before they become challenges. Professionals who specialize in construction interact with our designers to provide constructability reviews during a project's design, allowing the development of projects that can be built with minimal surprises. Construction engineers monitor projects as they are being built, so you can be sure your improvements ultimately comply with approved designs.



HR Green was tasked with preparing a concept map showing the entire Route N corridor between I-70 and I-64, the proposed improvements already under design or construction, as well as funded projects forthcoming. Additionally, HR Green conceptualized access management techniques between these projects with improvements including such as 3/4 intersections, J-turns, signalized intersections with U-turns, and roundabouts spaced approximately every mile along the over 10-mile corridor. The improvements were shown on the overall map and shared with the various constituency in order to further increase awareness for the need of a detailed corridor and environmental study, resulting in MoDOT's PEL study of the corridor in 2018.



Roadways and Interchanges

TRANSPORTATION

From urban arterial streets to federal interstates and interchanges, HR Green can help create sustainable, successful roadway systems.

The need for infrastructure that facilitates safe and efficient travel by all means, while maintaining environmental compliance, is the driver of our transportation business.

We partner with clients and stakeholders and take a creative and comprehensive approach to solving transportation challenges by first understanding the underlying needs of projects. We then link these needs to community values, environmental requirements and infrastructure standards to design a lasting solution that satisfies local citizens and businesses.

Our design teams develops safe, functional, affordable structures and roadways to provide connectivity for today's economy and lifestyles. Transportation solutions must consider the environmental impacts, current operations and future needs of any community. We will balance these elements to establish infrastructure that preserves our client's investments.

▶ **HR Green's transportation business line is supported by 268 professionals across our geographies.** We have expertise ranging from transportation planning and NEPA processing to Highway design, through program management and construction management. We have managed major transportation projects of significant value and complexity throughout our geographies.



Transportation Services:

- Roadway, Interchange, and Structural Design
- Funding Strategy and Procurement
- Transportation Planning
- 3D Modeling
- Location Studies
- Public Involvement/CSS
- Traffic Engineering
- NEPA Services and Permitting
- Drainage Planning and Design
- Construction Phase Services
- Value Engineering
- Access Justification Reports



Traffic Engineering

TRANSPORTATION

HR Green provides a full range of services from traffic impact studies, corridor studies, traffic signal studies and design, traffic safety evaluations, road safety audits and access management plans to traffic operations models, evaluation of potential "Road Diets", urban interchange and intersection design, roundabout design, implementation of the Safe Routes to School Program and funding applications for a variety of traffic improvement projects.

In collaboration with our geometric engineers, we can tackle traffic challenges in both the complex urban environment and the rural setting and develop cost effective solutions for interchanges, rural highway intersections, arterial intersections or county roads involving multi-lane intersections and roundabouts. During collaboration, we identify the safety or operational elements of concern and implement innovative geometric solutions to remedy them.

Traffic Engineering Services:

- Traffic Impact Studies
- Corridor Studies
- Traffic Signal Studies, Design and Optimization
- Traffic Safety Evaluations
- Road Safety Audits
- Access Management Plans
- Traffic Operations Modeling



Construction

CONSTRUCTION

Our construction professionals provide services to verify long-lasting, low maintenance facilities while managing our client's investment throughout construction. We provide the documentation and final records necessary for full reimbursement from funding authorities.

We do not wait until plans are finished before we involve the trained eye of a construction professional. We perform constructability reviews early in the design process whenever possible, even as early as the preliminary design phase. Above all, we want constructible projects. This approach frequently pays off in the form of favorable construction bids for our clients, and, in general, fewer change orders during the construction process.

Construction Services:

- Contract Administration
- Construction Observation
- Construction Management/Owner Representation
- Project Accounting and Material Tracking
- Performance Records and Payment
- On-Call Troubleshooting
- Constructability Reviews
- NPDES Erosion Control Services



Structural Design

TRANSPORTATION

HR Green structural engineers have experience in providing planning, preliminary engineering design, final design, and construction support services. Our bridge professionals are visionaries when it comes to understanding the core requirements of any bridge project. HR Green has a Midwestern regional reputation for providing designs that blend the needs of the client, the impact on the community, and the surrounding environment for each project.

We offer a full range of structural design services: from simple culvert extensions and noise and retaining wall designs, to bridge load analysis, deck replacement, bridge widening and new river, road or railroad crossings. HR Green's services have provided structure designs that complement a larger engagement such as corridor development and gateway features, as well as standalone structures that include vehicular and pedestrian facilities.

Our St. Louis based staff have been involved in structural projects throughout the Midwest. In the past 16 years, we have focused on designs that go beyond the basics and blend into the surroundings.



The Iowa DOT's Bridges and Structures Bureau hired HR Green through our 2016 On-Call Bridge contract to perform the final design and plan preparation for 11 bridges that are part of the I-29/I-480 Interchange in Council Bluffs, Iowa. The bridges included 4 pairs of mainline prestressed concrete girder bridges and three curved, steel plate girder ramp bridges. Final design and plan preparation for the project began in April 2018 and 100% Unapproved Plans for all bridges were submitted by October 2019. HR Green structural engineers from our teams in St. Louis, Des Moines, and Chicago worked together to make this possible. Design leads were assigned to each bridge or set of bridges and coordinated through bi-weekly conference calls throughout the design process. In order to efficiently produce consistent plan sets and work through common issues together, design teams shared calculations and details. The Iowa DOT has come to know HR Green's structural staff across all three offices and trusts our capability to deliver on such a critical investment in their infrastructure.



Environmental and NEPA

ENVIRONMENTAL

HR Green develops methods and strategies that are attentive to regulatory bodies, socially responsible and scientifically sound, while minimizing timeframe and costs.

Our highly collaborative and interdisciplinary approach allows us to effectively manage environmental concerns, regulatory requirements, funding strategies, public and agency coordination, and technology solutions with the needs of transportation infrastructure projects.

HR Green implements the procedural requirements of NEPA in accordance with individual agency policies, procedures and preferences. We prepare NEPA documentation for a variety of federal actions ranging from permitting decisions to major funding allocations. Clients rely on us to identify the resources within the project study area and determine the necessary steps to comply with NEPA and other federal and state laws such as the Clean Water Act, National Historic Preservation Act and Threatened and Endangered Species Act.

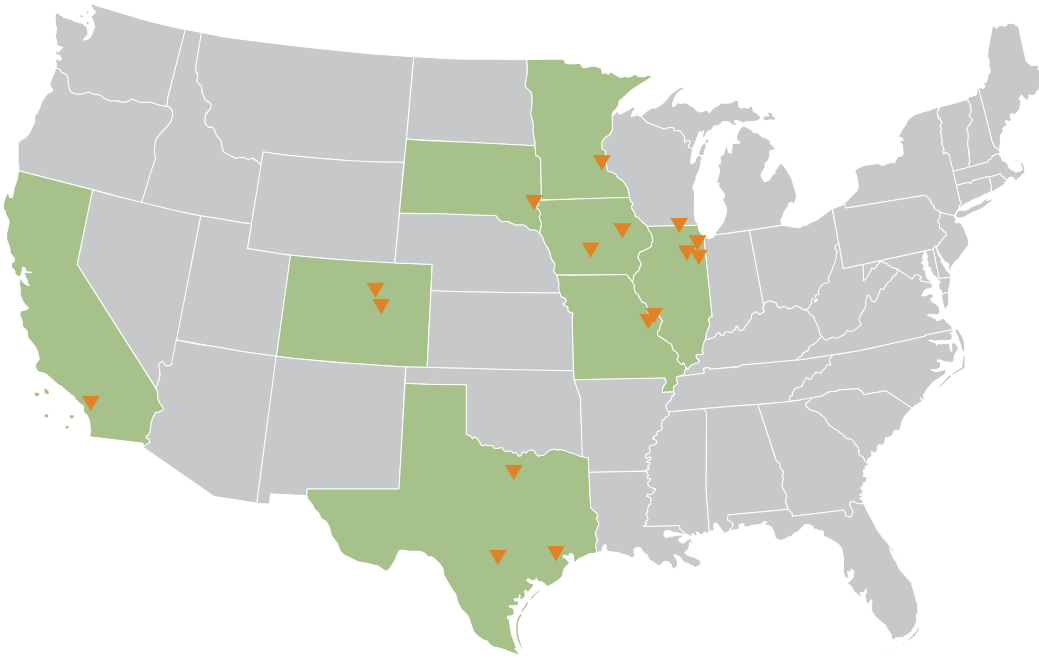
Environmental Services:

- Noise and Special Studies
- Land Use Inventory/Evaluation
- Contaminated Sites (Phase I & II ESA)
- Air Quality
- Cumulative and Indirect Impacts
- Wetlands Mitigation



Long-term impacts to the environment are increasingly at the forefront of engineering solutions to roadway projects. The NEPA process evaluated the impacts of the Shackelford Road widening project on water, air quality, noise and other environmental concerns. When the County acquired right-of-way from a substation property where contamination was suspected, Phase I & Phase II Environmental Site Assessments (ESA) and subsequent soil and groundwater sampling identified underground storage tanks that were mitigated during construction. The improvement also allowed for the creation of a regional wetland and pocket parks to address water quality and educate the public.

Locations



▷ With a staff of over 500 people and offices in 8 states, HR Green has employed the latest technology, operating in a virtual, cloud-computing environment. This allows our staff more efficient access to files and data, across all geographies providing improved mobility and delivery of projects.

For more than a century, HR Green has been dedicated to providing the services that our clients need to achieve success. We collaborate across geographies and markets to provide the engineering, technical, and management solutions that connect and shape communities and are driven by the commitment of our clients.

We commit to providing great client service through honesty, responsiveness, and understanding, forming a partnership with our clients and coworkers that leads to success.

HR Green is uniquely positioned to provide the services our clients demand. HR Green has 16 offices, primarily located in the Midwest (Missouri, Illinois, Iowa, Minnesota, and South Dakota) with additional offices in Texas, California, and Colorado.

▷ Our local Missouri

Transportation team allows us to easily provide specialty services to our clients. We are poised to handle peak workloads with our Missouri staff, while pulling resources from other locations when necessary.



JASON DOHRMANN, PE
Regional Director

- ▷ 16020 Swingley Ridge Road
Suite 205
Chesterfield, MO 63017-2085
Phone 636.519.0990
- ▷ 1475 Fairgrounds Road
Suite 100
Saint Charles, MO 63301
- ▷ **Direct** 636.812.4209
Cell 314.974.0229
Email jdohrmann@hrgreen.com



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